Missouri Botanical Garden
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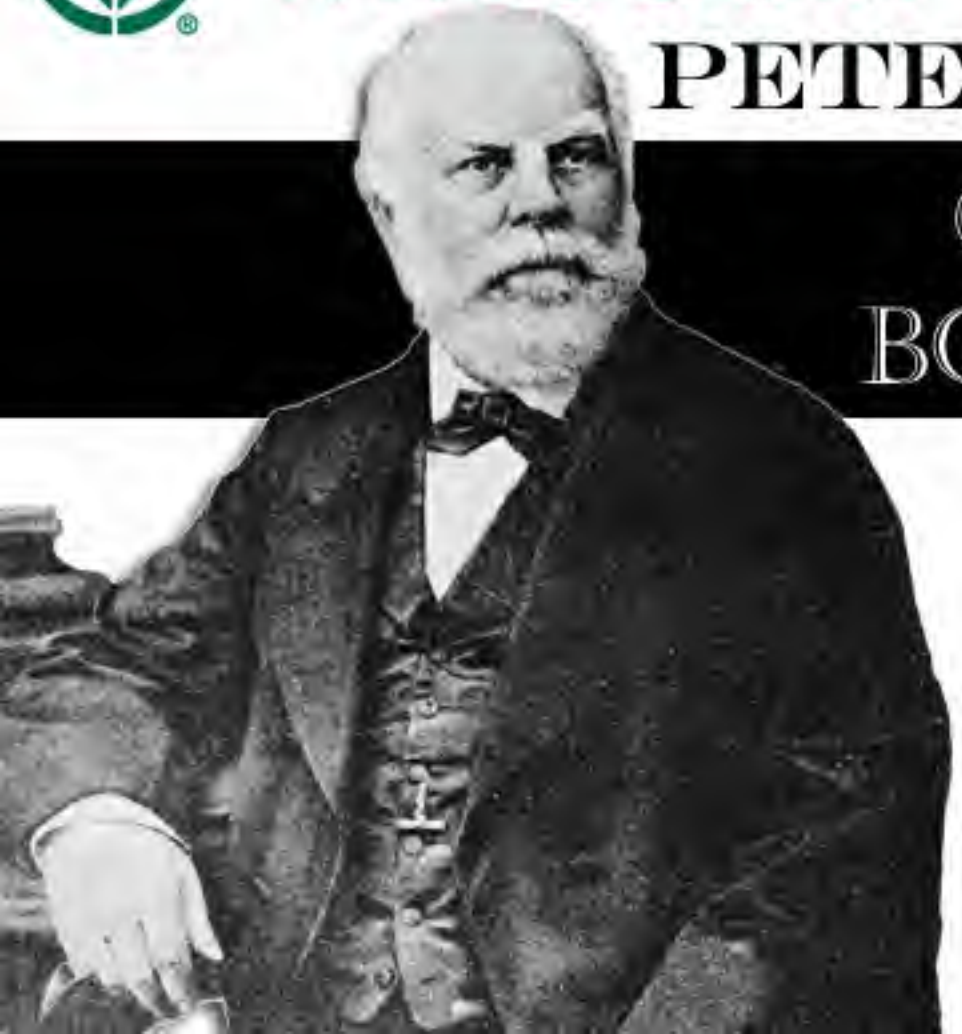
George Engelmann Botanical Notebooks



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TEMPERATURE.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861...	32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1°F.
1862...	28.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4°F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861...	72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862...	85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. *Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of* 6, 9, 12, 3, 6 *and* 9, *from morning till night, based upon daily observations at these hours through the years* 1861 *and* 1862, *at St. Louis, Mo.*

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F...	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3
1862	85.3	70.6	60.0	57.5	67.6	78.0

0 1 2 3 4 5 6 7 8 9 10 cm
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MISSOURI BOTANICAL GARDEN

9176
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Dec.....										
	112	191	211	230	259	265	351	550	S.E.	50

V. *Positive or Negative Electricity in the Observations of* '61 & '62.

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.....	179	179	3	5		2	40°	40°
Feb.....	162	166	6	2			34	33
March ...	168	179	15	8			30	48
April	157	157	12	22	1	1	33	52
May.....	171	180	17	5	1	3	25	32
June	162	143	5	2	8	20	16	21
July.....	183	153	3	8	1	24	14	11
August..	176	143	5	4	6	40	15	19
Sept.....	169	117	1	1	10	61	18	23
Oct.....	162	143	4	3	20	41	33	35
Nov.....	172	157	2	7	6	16	42	42
Dec.....	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°

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0 1 2 3 4 5 6 7 8 9 10 cm
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Aug 19 1865

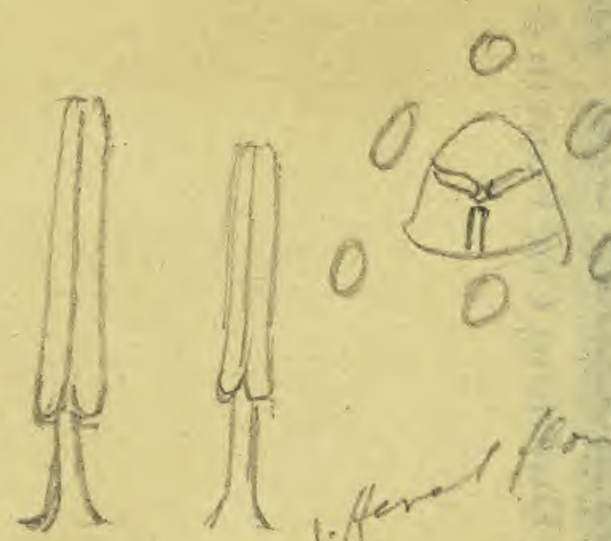
Lemna Sargentii

Jennatt. Switzerland

Leonhardi

×60

×10



stamens from different flowers

Kunth III 357 describes the plant as I have it

Inner sepals shorter than outer ones

Capsule shorter (Longer, Koch!) than sepals

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APOTHECARY & PHARMACEUTIST,

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Simons Jacquini Nov 23 1965

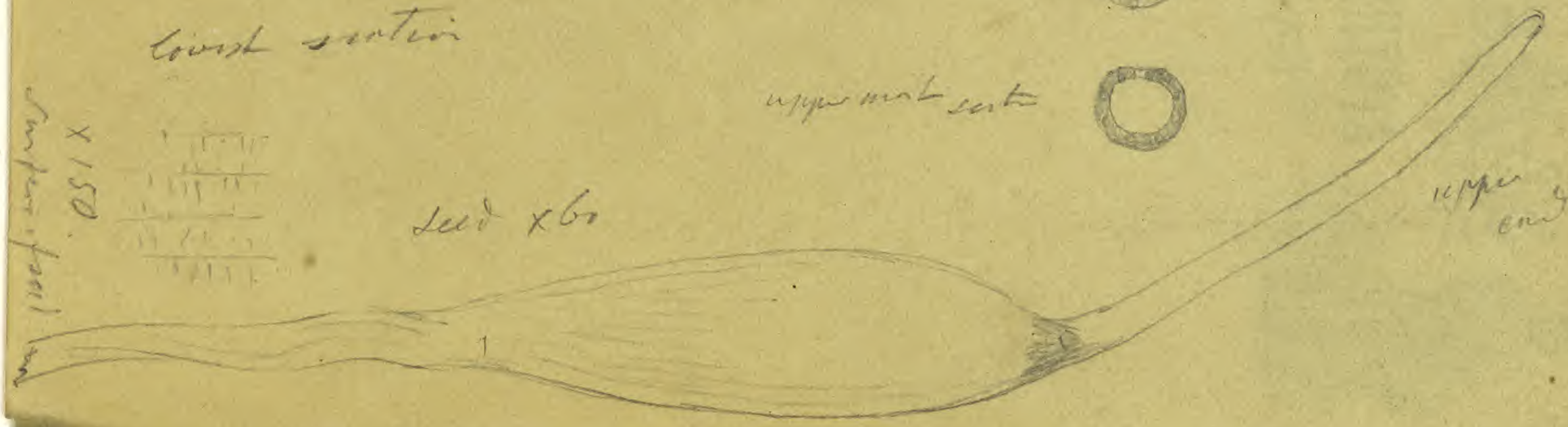
Jermatt, Lemhandi

Scale of leaf ×10

lowest section

upper most section

Seed ×60



upper end

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0 1 2 3 4 5 6 7 8 9 10
cm
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RELATIVE HUMIDITY.

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228

0 cm 1 2 3 4 5 6 7 8 9 10
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V. *Positive or Negative Electricity in the Observations of* '61 & '62.

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
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Nov.....	172	157	2	7	6	16	42	42
Dec.....	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°

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Juncus Hostii Tausch

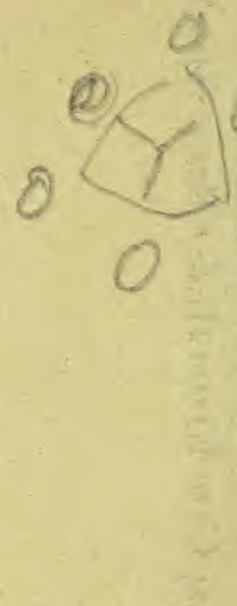
Aug 22 1865

Seiser Alp Tyrol

x60

ripe perfect seed

x10



anther opening

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cm 0 1 2 3 4 5 6 7 8 9 10
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224-7

interrupted descent and ascent took place from January to December, we find in 1862 some interruptions in the steps of that ladder. The electricity in February, 1862, is about four degrees higher than that of January, April somewhat higher than March, and July is the lowest instead of September in 1861. These trifling irregularities may be accounted for by differences in temperature and relative humidity, and by a greater number of thunderstorms in 1862. January of 1862, for instance, was so unusually rainy, that its relative humidity too was unusually high, diminishing thus electricity. But the general features of distribution of electricity throughout the year are apparent in both years, and we may in that respect divide the twelve months of each year into two or three groups. Computing the months which give the highest electricity and those which give the lowest in each year, we find that in both years the months of January, February, March, April, November and December exhibit the highest, and the months of May, June, July, August, September and October the lowest electricity. The first group gives

The aggregate monthly mean of	71.5	degrees	of electricity	in 1861
and	74.6	"	"	" 1862
While the second group gives	29.0	"	"	" 1861
and	25.7	"	"	" 1862

The second group prevailed therefore in 1861, and the 1st

VI. The appearance of negative electricity was connected in

1861. No. times.	1862. No. times.	
30	32	with thunderstorms.
23	28	with rains without thunder and lightning.
20	4	with dry storms (without rain and without thunder and lightning).
4	3	with snow.
1	0	with fog.
78	67	

VII. *Relation of Rain and Snow to Electricity.*

Rain without thunderstorm was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January.....	7	5	3	2	.....	2 .....
February						

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1816

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Aug 21 1965

Panicum trifidum

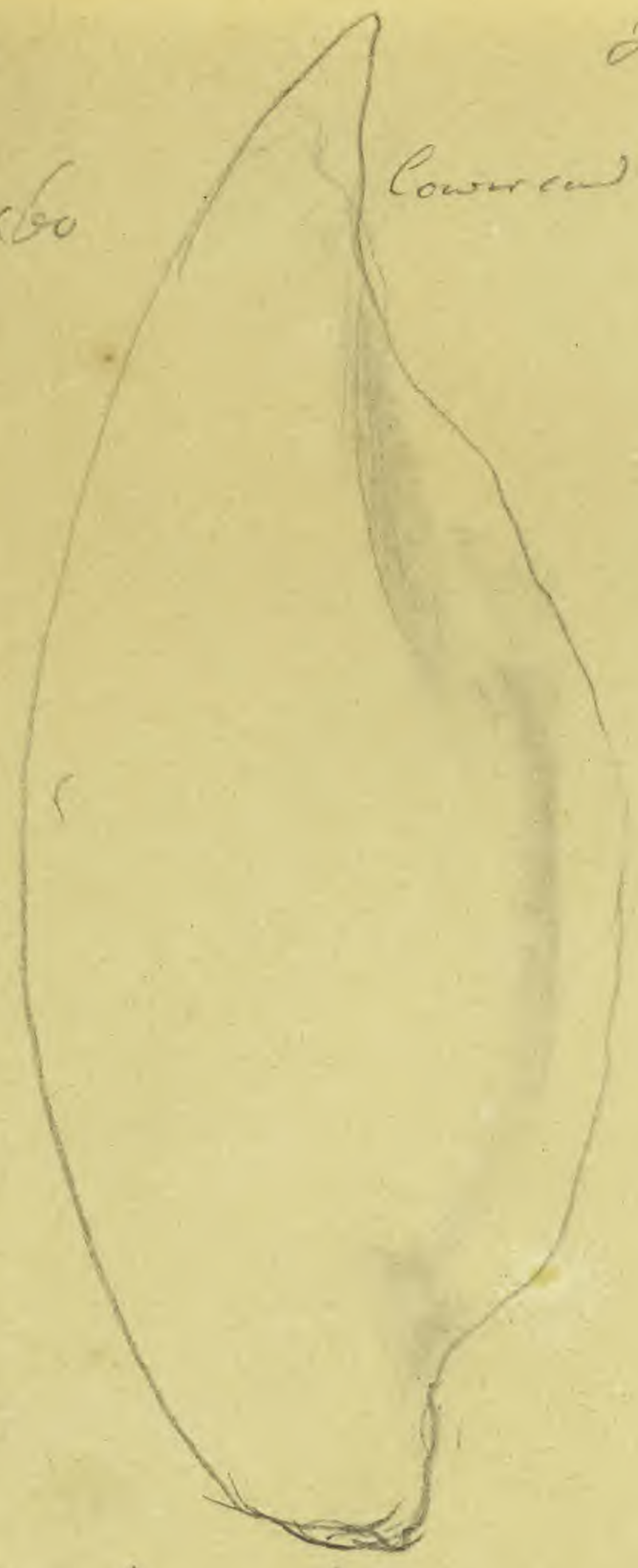
Pyrenees Cossa

x60

Common

x10

Sometimes capsule
exactly ellipt



Immature seed
apparently. full grown

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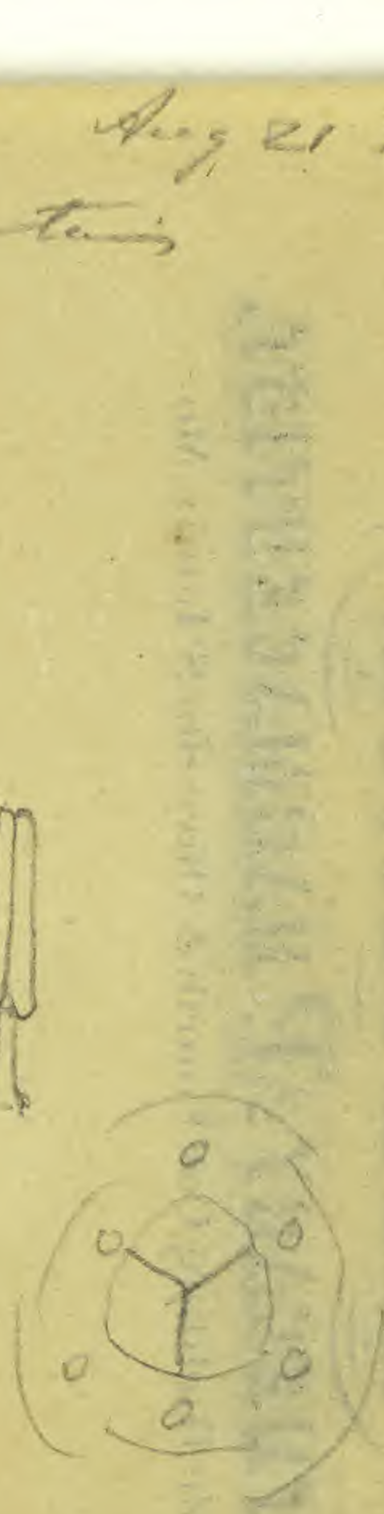
Smilacina trifolia
White Mountains
Aug 21 1895

×60

Crown end

Seed perfectly ripe

×10



Nov. 18

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cm
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L. hybridus

Aug 22 1865

× 10

anther spindle

Salzburg

Schweiter

Lap. Canada

Brit

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Herb. Hook. f. & Thomson No 4

Nov 22 1846

Kumaon 11 500 feet high, R. Strachey & J. E. Winterbottom

= the Grey habit of large Cinnamon plant 2–2½ feet high

Costaeus var protractus

leaves 2–4

stamen of a small flower 8 mm long

Fl. 8–10 mm long

stamen 5–6 mm long

one of the longest seeds, not quite ripe

4 mm

2 lin long

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Transcontinental

		Hitchcock	Gray	Engelm
	Barratt Little Pickering			
White Mtns	Greene Isabell etc		Gray	Bigelow
		Oakes	Oakes	
		Bigelow		
Jocelands		Kane		Kane
Mt Katahdin Maine		Thurber		
Scand of Mt Marcy. Essex Co N.Y.		Torrey's Flora		

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